



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,700	02/18/2004	Lin I-Yung	OP-092000407	8957
7590	11/15/2005		EXAMINER	
Yi-Wen Tseng 4331 Stevens Battle Lane Fairfax, VA 22033			CHANDRAN, BIJU INDIRA	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/779,700

Applicant(s)

I-YUNG ET AL.

Examiner

Biju Chandran

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: In page 4 line 24-26, element 4 is used to describe both the recessed channel and the conductor blocks. From the figures it appears that element 4 is referring to the conductor blocks. Accordingly, both the specification and Figure 6 as described should identify the recessed channels by an alternate element number.

Claim Objections

2. Claim 6 objected to because of the following informalities: The claim recites a recessed channel for accommodating the heat pipes. The specifications (page 4, line 24-26) point to element 4 in figure 6 to show the recessed channel. Element 4 points to the conductor blocks. Also, the figure does not show a recessed channel accommodating the heat pipes. It shows two thermal conductor blocks '4', one on either side of the heat pipe. The examiner has interpreted this claim thus, for the purpose of this examination.
3. Claim 7 objected to because of the following informalities: The claim specifies that the " thermal conductor block includes a U-shape plate on which a non-through slot is formed ...". The disclosure does not show a non-through slot. Appropriate correction is required.

Claim Rejections - 35 USC § 102

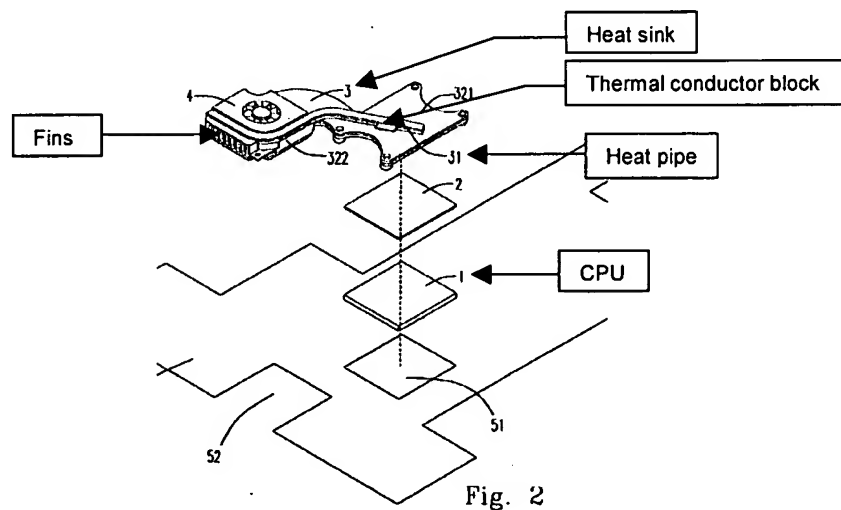
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

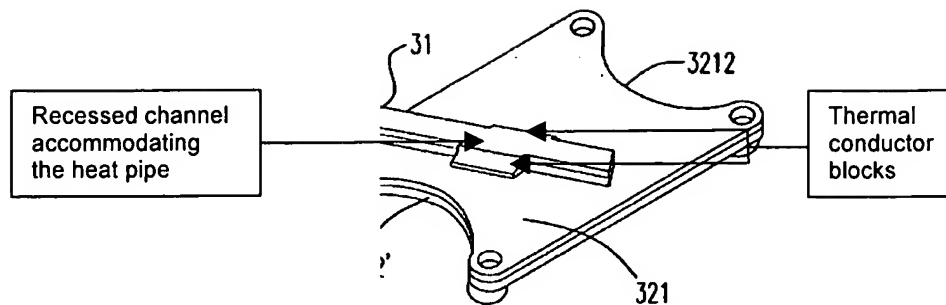
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-6 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Huang (PGPub US 2005/0083658 A1).



- Regarding claim 1, Huang discloses a heat dissipation structure, comprising: a heat sink (3), installed on a heat generating electronic device (1); at least one heat pipe (31), having a proximal end located on the heat sink and a distal end extends outside of the heat sink, wherein the heat pipe includes a wick structure and a working fluid therein (a heat pipe by definition is a heat transfer device with a sealed metal tube having an inner lining of wick like material and a small amount of liquid. See, for example, the definition of heat pipe in *McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth edition*); a set of fins connected to the distal end of the heat pipe (marked in figure); at least one thermal conductor block installed on the heat sink and adjacent to the heat pipe (marked in figure), the thermal conductor block is operative to store thermal energy.
- Regarding claim 2, Huang further discloses that the heat sink further comprises an extension towards the set of fins (see figure).
- Regarding claim 3, Huang further discloses that the extension extends over the set of fins to form a guide portion.
- Regarding claim 4, Huang further discloses that the electronic device included a central processing unit (marked '1', paragraph 0020).



- Regarding claim 5, Huang further discloses two thermal conductor blocks at two sides of the heat pipe.
- Regarding claim 6, Huang further discloses that the thermal conductor includes a recessed channel for accommodating the heat pipe therein (see figure).
- Regarding claim 11, Huang further discloses that the thermal conductor block is fabricated in a form of reinforcing rib.

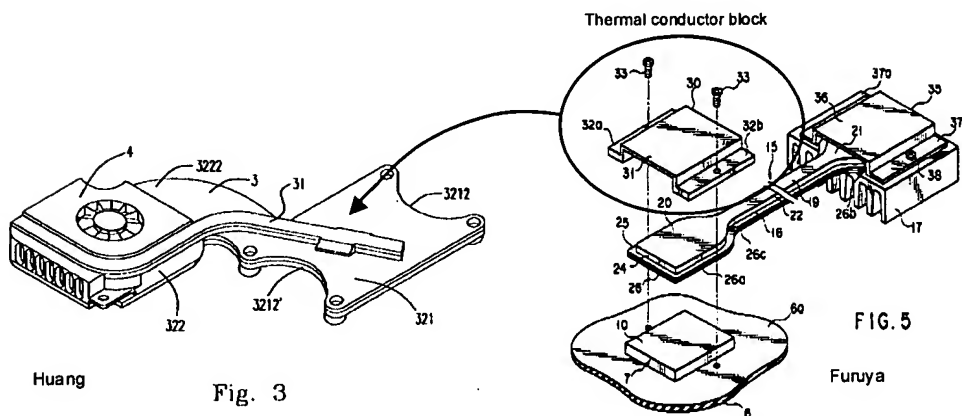
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Huang as applied to claim 1 above, and further in view of Furuya (US Patent 6,504,720 B2). Huang discloses all the limitations of claim 1, but does not disclose a thermal conductor block, which is a U-shaped plate

with a non-through slot. Furuya discloses a thermal conductor block, which includes a U-shape plate on which a non-through slot is formed for embedding the heat pipe therein. At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the thermal conductor block as taught by Furuya in the heat dissipation structure disclosed by Huang to make sure that the heat pipe is securely attached to the heat dissipating device.



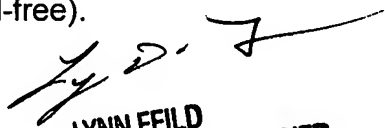
6. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang. Huang discloses that the heat sink is made of a "metal alloy having excellent heat transfer rate" (paragraph 0021), but does not explicitly disclose the material of the thermal conductor blocks. It would have been obvious to one of ordinary skill in the art at the time of the invention, to form the thermal conductor blocks of copper, aluminum, an alloy of the two, or any other material, based upon routine experimentation to determine the best material based upon thermal conducting efficiency, price, availability, ease of manufacturing, etc.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Biju Chandran whose telephone number is (571) 272-5953. The examiner can normally be reached on 8AM - 5PM. Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bic


LYNN FEILD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800